

Application No.: 09/974040

Case No.: 56685US002

Claim Amendments

1. (currently amended) A co-extruded, uni-axially oriented multi-layer film comprising a co-extruded uni-axially oriented microfiber layer, wherein the film comprises two opposing surfaces, each surface comprising microfibers having average effective diameters of less than 20 microns and transverse aspect ratios of from 1.5:1 to 20:1, [and] wherein one surface is hydrophilic and one surface is hydrophobic.
2. (original) The film of claim 1 wherein the film is uni-axially oriented by stretching in one direction relatively more than stretching in a perpendicular direction.
3. (canceled)
4. (canceled)
5. (previously presented) The film of claim 45 comprising two opposing surfaces, one surface comprising microfibers and the other surface not comprising microfibers.
6. (previously presented) The film of claim 5 wherein a film layer having the surface not comprising microfibers exhibits a property selected from the group consisting of elasticity, high or low modulus, puncture resistance, tear resistance, breathability, flame retardancy, high temperature resistance, low temperature resistance, and combinations thereof.
7. (original) The film of claim 1 comprising a microfiber layer and a non-microfiber layer,
the microfiber layer comprising a material that exhibits a property selected from the group consisting of hydrophobicity, hydrophilicity, oleophobicity, oleophilicity, a dielectric property, low coefficient of friction, stain resistance, flame retardance, high strength or modulus, an ability to produce a certain size microfiber, and combinations thereof, and
the non-microfiber layer comprising a material selected from the group consisting of a hydrophobic material, a hydrophilic material, an elastomeric material, a tear resistant material, a puncture resistant material, a high or low temperature resistant material, high strength, high modulus, adhesive properties, and a flame retardant material.

Application No.: 09/974040

Case No.: 56685US002

8. (original) The film of claim 7 wherein the microfiber layer comprises a polypropylene.
9. (original) The film of claim 7 wherein the non-microfiber layer comprises an elastomeric polymer.
10. (previously presented) The film of claim 1 wherein the multi-layer film is selected from the group consisting of
a film consisting of two layers and a film consisting of three layers.
11. (original) The film of claim 1 wherein the film comprises a non-microfiber layer comprising a material selected from the group consisting of a polypropylene, a polyethylene, a styrene-ethylene/butylene-styrene block copolymer, a styrene-isoprene-styrene block copolymer, a polyurethane, a fluoropolymer, poly(butylene), poly(isoprene), a nylon, and an adhesive.
12. (original) The film of claim 1 wherein the film comprises two microfiber layers sandwiching a non-microfiber layer.
13. (original) The film of claim 12 wherein the non-microfiber layer is elastomeric.
14. (original) The film of claim 12 wherein the non-microfiber layer comprises a material selected from the group consisting of a polypropylene, a polyethylene, a styrene-ethylene/butylene-styrene block copolymer, a styrene-isoprene-styrene block copolymer, a polyurethane, a fluoropolymer, poly(butylene), poly(isoprene), a nylon, and an adhesive.
15. (original) The film of claim 12 wherein a microfiber layer is a semicrystalline polymer selected from the group consisting of high and low density polyethylene, polypropylene, polyoxymethylene, poly(vinylidene fluoride), poly(methyl pentene), poly(ethylene-chlorotrifluoroethylene), poly(vinyl fluoride), poly(ethylene oxide), poly(ethylene terephthalate), polyethylene naphthalate, poly(butylene terephthalate), poly(lactic acid), nylon 6 12, nylon 6,

Application No.: 09/974040

Case No.: 56685US002

nylon 66, polybutene, a thermotropic liquid crystal polymer, a blend of one or more of these polymers, or a copolymer of one or more the named monomers.

16. (canceled)
17. (original) The film of claim 1 wherein the film comprises from about 2 to about 5 layers.
18. (original) The film of claim 1 wherein the film comprises from about 2 to about 5 layers, and the total film thickness prior to fibrillation is in the range from about 25 to about 10,160 microns.
19. (previously presented) The film of claim 1 consisting of two microfiber layers and a non-microfiber layer.
20. (original) The film of claim 1 consisting of 2 microfiber layers.
21. (original) The film of claim 1 consisting of 3 layers: one non-microfiber layer sandwiched by two microfiber layers.
22. (canceled)
23. (currently amended) The film of claim 1 wherein each surface comprises microfibers having [the microfibers have an] average effective diameters of less than 5 microns.
24. (currently amended) The film of claim 1 wherein each surface comprises microfibers having [the microfibers have an] average cross-sectional areas of $0.7 \mu^2$ to $2.1 \mu^2$.
25. (previously presented) A co-extruded multi-layer microfiber article comprising the film of claim 45, comprising two co-extruded microfiber layers and a co-extruded non-microfiber layer comprising a material selected from the group consisting of a polypropylene, a polyethylene, a styrene-ethylene/butylene-styrene block copolymer, a styrene-isoprene-styrene

Application No.: 09/974040Case No.: 56685US002

block copolymer, a polyurethane, a fluoropolymer, poly(butylene), poly(isoprene), a nylon, and an adhesive.

26. (original) The article of claim 25 wherein the non-microfiber layer is elastomeric.

27. (previously presented) The article of claim 25 wherein the non-microfiber layer exhibits a property selected from the group consisting of elasticity, high or low modulus, puncture resistance, breathability, flame retardancy, temperature resistance, and combinations thereof.

28. (previously presented) The film of claim 25 wherein a microfiber layer comprises polypropylene.

29. (previously presented) A co-extruded, uni-axially oriented, multi-layer film comprising a non-microfiber layer sandwiched between two microfiber-forming layers, wherein one microfiber layer can be microfibrillated to a hydrophilic surface, and one microfiber layer can be microfibrillated to a hydrophobic surface.

30. (previously presented) The film of claim 45 consisting of two layers.

31. (currently amended) The film of claim 45 consisting of two microfiber [[-forming]] layers.

32. (original) The film of claim 29 consisting of three layers.

33. (canceled)

34. (canceled)

35. (canceled)

Application No.: 09/974040

Case No.: 56685US002

36. (original) A multi-layer microfiber article comprising a first microfiber layer at a surface of the article, and second microfiber layer adjacent to the first microfiber-layer, wherein areas of the surface are microfibrillated to form microfibers of only the first layer, and areas of the surface are microfibrillated through the first layer to form microfibers of the second layer.

37. (original) The multi-layer microfiber article of claim 36 wherein a surface of the article includes a pattern comprising a first area of microfibers of one layer of the article, and a second area of microfibers of the second layer.

38. (previously presented) The article of claim 37 wherein an area of microfibers has a property selected from the group consisting of hydrophobicity, hydrophilicity, oleophilicity, and oleophobicity.

39-44. (canceled)

45. (currently amended) A multi-layer film comprising two microfiber layers, wherein one microfiber layer is hydrophilic and one microfiber layer is hydrophobic, and wherein each microfiber layer comprises microfibers having average effective diameters of less than 20 microns and transverse aspect ratios of from 1.5:1 to 20:1.

46. (previously presented) The multi-layer film of claim 45 comprising two microfiber layers sandwiching a non-microfiber layer.

47. (previously presented) The film of claim 46 wherein the non-microfiber layer is elastomeric.

48. (previously presented) The film of claim 46 consisting of three layers.

49. (previously presented) The film of claim 46 consisting of three coextruded layers.

Application No.: 09/974040

Case No.: 56685US002

50. (new) A co-extruded, uni-axially oriented multi-layer film comprising a co-extruded uni-axially oriented microfiber layer, wherein the film comprises two opposing surfaces, wherein one surface is hydrophilic and one surface is hydrophobic, and wherein each surface comprises microfibers having average effective diameters of less than 5 microns.

51. (new) A co-extruded, uni-axially oriented multi-layer film comprising a co-extruded uni-axially oriented microfiber layer, wherein the film comprises two opposing surfaces, wherein one surface is hydrophilic and one surface is hydrophobic, and wherein each surface comprises microfibers having average cross-sectional areas of $0.7 \mu^2$ to $2.1 \mu^2$.

52. (new) A multi-layer film comprising two microfiber layers, wherein one microfiber layer is hydrophilic and one microfiber layer is hydrophobic, and wherein each microfiber layer comprises microfibers having average effective diameters of less than 5 microns.

53. (new) A multi-layer film comprising two microfiber layers, wherein one microfiber layer is hydrophilic and one microfiber layer is hydrophobic, and wherein each microfiber layer comprises microfibers having average cross-sectional areas of $0.7 \mu^2$ to $2.1 \mu^2$.